What is claimed is:

1. A method of repairing a gas turbine engine turbine blade, the blade having an airfoil and a tip cap on the airfoil at the tip of the blade comprising: removing the tip cap and a portion of the airfoil from the blade to form a repair surface on the airfoil; forming a replacement tip section comprising a replacement tip cap and a replacement portion of an airfoil sized to fit onto the repair surface; and attaching the replacement tip section to the repair surface.
2. Method of Claim 1 wherein the blade having the airfoil and the tip cap have been cast as one piece.
3. Method of Claim 1 wherein the tip cap has a squealer tip extending beyond the tip cap.
4. Method Claim 3 wherein the blade, the tip cap and the squealer portion have been manufactured as one piece.
5. Method of Claim 3 wherein the replacement tip section further comprises a replacement squealer tip.
6. Method of Claim 1 further comprising drilling cooling holes into the replacement tip section.
7. Method of Claim 1 the replacement tip section is attached to the repair surface by welding, brazing, or thermal or thermo-mechanical diffusion bonding.
8. Method of Claim 1 where the replacement tip section is cast as one piece.
9. Method of Claim 1 wherein the length of the replacement portion of the airfoil is from greater than 0 cm to about 2 cm.

10. Method of Claim 8 wherein the repair surface and the replacement tip section are machined to size to provide a repaired blade with a desired height.

11. A gas turbine engine turbine blade which comprises:
a blade body having a first portion of an airfoil cast as one piece;
a distinct tip section comprising a tip cap and a second portion of an airfoil which is sized to fit on the first portion of the airfoil; and
the first portion of the airfoil of the blade body being attached to the second portion of the airfoil of the tip section.

12. Blade of Claim 11 wherein the first portion is attached to the second portion by welding, brazing, or thermal or thermo-mechanical diffusion bonding.

13. Blade of Claim 11 wherein the length of the second portion of the airfoil is from greater than 0% to about 25% of the total length of both the first portion and the second portion of the airfoil.

14. Blade of Claim 11 wherein the blade body and the tip section are formed from the same superalloy material.

15. Blade of Claim 11 wherein the blade body is formed from a first superalloy material and at least a portion of the tip section are formed from a second material distinct from the first superalloy material.

16. Blade of Claim 15 wherein the first superalloy material is selected from the group consisting of equiax, directionally solidified and single-crystal nickel-base superalloys.
17. Blade of Claim 15 wherein the second superalloy material is selected from the group consisting of equiax, directionally-solidified and single-crystal nickel-base superalloys and a ceramic material.
18. Blade of Claim 11 wherein the length of the second portion of the airfoil is from greater than 0 cm to about 2 cm.
19. Blade of Claim 11 wherein the tip cap further comprises a squealer tip.
20. Blade of Claim 11 wherein the tip section is cast as one piece.
21. A process for manufacturing a turbine blade comprising:
    casting as one piece a blade body having a first portion of an airfoil;
    forming a tip section having a tip cap and a second portion of an airfoil which is sized to fit on the first portion of the airfoil; and
    attaching the first portion of the airfoil to the second portion of the airfoil.
22. Blade of Claim 21 wherein the first portion is attached to the second portion by welding, brazing, or thermal or thermo-mechanical diffusion bonding.
23. Blade of Claim 11, wherein the length of the second portion of the airfoil is from greater than 0% to about 25% of the total

length of both the first portion and the second portion of the airfoil.

24. Blade of Claim 21 wherein the blade body and the tip section are formed from the same superalloy material.
25. Blade of Claim 21 wherein the blade body is formed from a first superalloy material and at least a portion of the tip section are formed from a second material distinct from the first superalloy material.
26. Blade of Claim 25 wherein the first superalloy material is selected from the group consisting of equiax, directionally-solidified and single-crystal nickel-base superalloys.
27. Blade of Claim 25 wherein the second material is selected from the group consisting of equiax, directionally-solidified and single-crystal nickel-base superalloys and a ceramic material.
28. Blade of Claim 21 wherein the length of the second portion of the airfoil is from 0 cm to about 2 cm.
29. Blade of Claim 21 wherein the tip cap further comprises a squealer tip.
30. Blade of Claim 21 wherein the tip section is cast as one piece.